Montana's Regional Innovation Grant (RIG)
Core Leadership Group

Exploring Forestry Based Products and Forest Stewardship Industry Cluster in Western Montana

"Responsible utilization and management of natural resources is a critical component of society's ability to exist and prosper. Working landscapes successfully balance economic, social, and ecological priorities. In rural places, working landscapes are often the primary source of jobs and income" -Sustainable Northwest

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1. What entities make up this industry cluster in Western Montana?

Western Montana Forestry Based Products and Forest Stewardship Industry has a multitude of layers that interact and support each other. The "Montana Timber Industry Focus Report" has developed a list of NAICS industries that are included in the Forestry Based Products and Forest Stewardship Industry Cluster.

Timber Tract Operations	*Forest Nursery and gathering forest products*
Logging	*Support activities for forestry*
Sawmills	*Wood Preservation*
Hardwood veneer and plywood manufacturing	*Softwood veneer and plywood manufacturing*
Engineered wood member manufacturing	*Truss manufacturing*
Reconstituted wood product manufacturing	*Cut stock, resawing lumber, and planning*
Other millwork, including flooring	*Wood container and pallet manufacturing*
Prefabricated wood building manufacturing	*Miscellaneous wood product manufacturing*
Paperboard mills	*Corrugated and solid fiber box manufacturing*
Coated and laminate packaging materials manufacturing	*Sanitary paper product manufacturing*
Sawmill and woodworking machinery	*Wood kitchen cabinet and countertop manufacturing*
Upholstered household furniture manufacturing	*Non-upholstered wood household furniture manufacturing*

Institutional furniture manufacturing	*Wood office furniture manufacturing*
Custom architectural wood work and millwork	*Showcases, partitions, shelving, and lockers*
Lumber and wood merchant wholesalers	*Wood window and door manufacturing*

In addition to the above information the Committee defined the following as critical entities for the Forestry Based Products:

- *Mills: saw, ply, med-density, portable and paper*
- *Loggers: companies, Montana Logging Association, gypo-independent, log haulers,*
  **** NOTE: Montana Logging Association has over 700 members*
- *Value-added production: log homes, post & poles, furniture, spec beams, pellets, alternative energy (i.e. biomass and ethnol development), wood shavings*
- *Supporting Industries: equipment, part stores, fuel dealers, trucking firms, financial institutions, utilities company*

Another aspect to this cluster is focused on the Forestry Stewardship portion. Though many of the above industries straddle between production and stewardship and there really isn't one without the other the there are forest opportunities separate from Forestry Based production. The following are examples of some of the work being done under Forestry Stewardship that is not directly related to the manufacture of wood based products.

- *Noxious Weed control*
- *Brushing and maintenance work of trails*
- *Riparian conifer planting and maintenance*
- *Stream reconstruction*
- *Decommissioning, Restructuring, Maintenance, Storm-proofing of Roads*
- *Treating existing slash piles*

It is also important to note that the Forestry Related Industries and Clusters impact Western Montana's Tourism industry. Western Montana's tourism industry is based on having access to the forest for hiking, biking, snowmobiling, cross country skiing and snowshoeing, recreational driving, viewing wildlife, fishing, berry picking, hunting and outfitting etc.

With this, the Committee recognizes that if the Forestry Related industries/cluster continues to decline there will be a direct negative impact on the following industries:

- *Utility Companies*
- *Entertainment services*
- *Tourism related industries*
- *Fuel and Vehicle based services*
- *Value-added production lines*
- *Financial institutions*

For the purpose of this paper we have identified the following businesses that are directly involved in Forest Based Production. Please note that this list is not a complete list of every forestry/timber based business in Western Montana. It is the intention of the Committee to continue to identify and include as needed.

- *FH Stoltze Land and Lumber Co; Columbia Falls*
- *Plum Creek Timber Company; Columbia Falls, Pablo, Fortine, Evergreen (Kalispell)*
- *Pyramid Mountain Lumber Co; Seeley Lake*
- *Smurfit-Stone Container Corp; French Town*
- *Sun Mountain Lumber Company; Drummond*
- *Chapel Cedar; Troy*
- *Four Corners Pine, LLC; Trout Creek*
- *Marks Lumber; Clancy*
- *Marks-Miller Post & Pole, Inc; Clancy*
- *Montana Timberline Firewood Co; Kalispell*
- *Rocky Mountain Log Homes and Lumber Co; Hamilton*
- *Simpson Lumber Co; Kalispell*
- *Thompson River Lumber; Thompson Falls*
- *Tricon Lumber LLC; St. Regis*
- *LuckEG Post and Pole; Libby*
- *Eureka Pellet Mill-Montana Renewable Resources; Eureka*
- *Montana Woodworks; Rexford*
- *Gwynn Lumber; Eureka*
- *RBM Lumber; Columbia Falls*
- *Hunts Timbers, Inc.; St. Ignatius*
- *Johnson Brothers; Olney*
- *Tobacco Valley Lumber Co; Kalispell*
- *Glacier Creek Logging and Lumber; Condron*
- *Western Building Centers; 7 County Region*
- *Roseburg Industries; Missoula*

This list does not include all the logging companies and the other secondary/supporting companies that are involved in the Forestry Based Products and Forest Stewardship Cluster.

2. What are the high impact organizations within the cluster and where are they located? Draw a map that helps us have some sense of the region?

- *All the businesses listed above- map is attached*

We have identified that the following organizations also play a role in the cluster of Forestry as well as provide critical employment and workforce needs. Again, we acknowledge that this list is incomplete and open to additions as identified.

- *USFS-Regional Office: Missoula*
- *Montana State DNRC*
- *University of Montana-School of Forestry: Missoula*
- *Flathead Valley Community College- Logging Team: Kalispell*
- *Montana Logging Association*
- *Montana Forest Owners Association*
- *Montana Wood Products*
- *Montana Forest Council*
- *Restore Montana: Missoula*
- *Northwest Connections: Missoula and Seeley-Swan*
- *Montana Tree Farm*
- *Society of American Foresters*
- *Sustainable Northwest and Rural Voices for Conservation Coalition: Portland, Oregon*
- *Missoula Area Economic Development Corp: Missoula*
- *Montana Dept. of Commerce Regional Development Office: Missoula*
- *Montana West Economic Development: Kalispell*
- *Northwest Economic Development District*
- *Bitterroot Economic Development District*
- *Eureka Rural Development Partners; Eureka*
- *Montana Community Development Corporation*
- *Montana Forest Restoration Committee*
- *Sierra Club*
- *The Nature Conservancy*
- *Rocky Mountain Elk Foundation*
- *The Wilderness Society*
- *MT Dept. of Fish, Wildlife and Parks*
- *Montana Wilderness Association*
- *WildWest Institute; Missoula*
- *Kootenai River Development Council; Libby*
- *National Network of Forest Practitioners*
- *Provider Pals; Libby*
- *Swan Ecosystem; Condron*
- *Yaak Valley Forest Council; Yaak/Troy*
- *Kootenai Salish Tribe*
- *MSU Extension Offices: Mineral, Lincoln, Lake, Sanders, Missoula, Flathead*
- *Montana Legacy Project; the Trust for Public Lands*
- *Community Forest and Open Space Conservation Program*
- *County Commissioners and RAC committees*
- *Local Chambers of Commerce*

3. From the perspective of entities involved, what are the conditions of the industry now and why? From their perspective, what realistic growth opportunities exist?

Northwest Montana's Forest based production is in a critical decline that is directly related to the downturns in construction and housing components of the national economy. The industry historically experiences larger business cycle swings. The demand and price for finished products rises and falls with the rise and falls of the home starts. The other factor in the decline of the industry is the availability and ability to harvest raw materials. The federal and state governments, through continued environmental pressures, have drastically changed their process in removing timber.

A key point regarding the Forest Related Industries is that they are historically a reactive industry. Our committee recognizes the need for Forest Related cluster industries to move into a more proactive stance in order to sustain.

As of December 2008, the wood products market is in very poor condition. The sub-prime mortgage crisis and the subsequent recession have the real estate market flooded with homes, foreclosures and tight loan requirements. Housing starts nationally are at a 25 year low and as a result there is little current market in the United States. Poor economic conditions in the United States and falling value of the dollar on the international markets have resulted global economic slowdown, resulting in a slowdown also in the export of timber. Although the dollar has gained some strength internationally, it is primarily due to weakening of other currencies, and not to any real financial stability in the American market.

The economic crisis comes on the heels of several years of timber market downturn. Current national policies that control the federal wood supply have had a significant negative effect on the timber industry in western Montana where federal land ownership makes up most of the 16 million acres of federal land in the State. Without a steady, reliable source of timber to feed mills many companies, especially small companies have struggled to continue operations and many have failed. These conditions have lead to temporary closures and layoff for some mills.

Imports of wood products, particularly from Canada have also played a part in the effect on the forest products industry in western Montana. Most Canadian forestlands are provincially held Crown lands (77%), each with an annual allowable cut. This annual production is not, generally, interrupted by injunctions and lawsuits as are timber sales on public land in the US. This policy difference and our timber trade agreements with Canada have helped provide a steadier flow of wood to the mills, but it has negative impacted US-based logging companies because their skills are not needed.

From their perspective, what realistic growth opportunities exist?

Biomass power generation: *Mills with biomass or co-generation plants will continue to generate part of their own power in the future. Although estimates of biomass availability indicate that sources are numerous, biomass fuels are not likely to be economically viable with current technology due to costs incurred in handling and transporting individual small wood pieces. If harvested with larger wood that has timber value, removal of small wood becomes more feasible. Currently, it is when mills can use their own wood waste that biomass energy production is most feasible.*
Pellet production is a growing industry. Pellet fuels are up 25% nationally from 2005 to 2007, however available feedstock in dependent on mill production and waste wood generation.

There is a need for better technology to reduce handling costs and remove small wood from the forest and this will increase the viability of biomass energy production.
Expected increases in electrical costs will also make biomass power production more feasible in time. Hazardous fuel reduction costs can be offset by the removal and utilization of small trees and slash, but this risk reduction is difficult to quantify.
Barriers to feasibility – current small wood removal costs exceed monetary returns of power generation, i.e harvesting, removal, transportation, sorting, processing
Impetus to overcome barriers – renewable energy mandates, increasing electrical costs, BPA electrical caps and increasing population growth.

Biofuels: *Global production of biofuels is increasing annually, at equivalent of 300,000 barrels per day and current production levels are expected to triple in the next decade. When cellulosic ethanol production becomes economically feasible, demand for woody materials will increase. This increase could create market shortages for raw materials for lumber production. Methods to increase the amount of ethanol produced from a specific amount of wood are being developed, and cellulosic ethanol holds greater promise than currently used feedstock supplies, i.e corn.*
Barriers to feasibility – technology is in developmental stage and current small wood removal costs exceed monetary returns of production i.e harvesting, removal, transportation, sorting, processing; current low petroleum prices
Impetus to overcome barriers – renewable energy mandates, increasing electrical costs, national mandate to reduce reliance on foreign oil.

Industrial chemicals: *Extraction processes associated with biofuels will result in valuable byproducts that are currently manufactured in other countries, or are currently produced from petroleum.*

Barriers to feasibility – technology for biofuel is in developmental stage

Impetus to overcome barriers – renewable energy mandates, national mandate to reduce reliance on foreign oil.

Green building products: *Annual U.S. market of green building products and services is $7 billion in 2005, $12 billion in 2007 and is projected to reach $60 billion by 2010. Western Montana should be able to garner a portion of this market. By linking wood product production with good forest management and stewardship, incorporating principles of carbon sequestration, and small diameter wood use western Montana could be identified with "green" building products. Current infrastructure could be used to produce products in an environmentally sound way.*

Barriers to feasibility – local perceptions of green products, economic condition, supply and demand

Impetus to overcome barriers – social interest in green products, i.e marketing power, value added use of small diameter material, carbon sequestration

Carbon sequestering*: While currently a voluntary market, the US carbon market is gaining momentum and may represent a significant opportunity in the future. If regulation of carbon emissions is made mandatory as it is in some parts of the world and the cap and trade system is implemented, carbon credits could represent a significant industry in western Montana. Tied to forest stewardship and wood products, carbon credits could offset costs associated with reforestation, create revenue and provide funding for other environmental or stewardship projects.*

4. What infrastructure is critical to this industry cluster as it moves forward?

The Forestry Based Products is dependent on a variety of infrastructure, both public and private. As the Missoula Area Economic Development Corporation completed their evaluation and recommendation in the Montana Wood Products Industry Initiative, they highlighted the critical components needed to keep the remaining manufacturing facilities open and accessible. The manufacturing facilities involves sawmill type operations as well as the value added and less traditional systems.

Transportation also plays a vital role in the future of the Montana Forest Based Production. Weight restrictions on roads are severely handicapping the Forest Based production industry, as the loggers have difficulties moving the materials they harvest during the winter months, when it is environmentally sound to do so. Collaboration efforts are making head way in bridging interests groups and understanding forest health. However, many sales are restricted to winter logging and during the annual thaw many roads are closed to weights. This weight issues also affects all sub-industries as well.

The following infrastructure is needed to retain and expand the forest products industry in the state.

- *These include the remaining manufacturing facilities: sawmills for dimensional lumber that utilize both large and small logs; pulp mills for paper manufacturing which use clean, non-saw material; plants for the manufacturing of medium density fiberboard or MDF that use clean chips; pellet mills which use clean chips and/or sawdust; finger jointer facilities that use milled ends and pieces, boiler systems which utilize hog fuel or coarse waste wood material and kilns and dryers for removing moisture from wood products.*

- *The existing railroad system needs to be upgraded and expanded to provide cheaper, reliable transportation between rural wood producing regions, manufacturing facilities and urban markets. Existing rail sidings need to be maintained and new sidings developed. Primary and secondary haul routes need to be constructed and maintained to a level that permits safe and efficient travel at GMV weights allowed by truck and trailer manufactures. Designate truck routes to mills that reduce obstacles and increase safety for truck drivers and the public.*

- *Infrastructure needed for developing newer forest products industries including ethanol plants, including labs for bacteria and enzyme culturing, and bulk and blending facilities; efficient boilers with scrubbers or CO2 capture technology and turbines for biomass power generation, additional power transmission lines and substations, wastewater treatment plants and upgraded water systems. Development of new technology and efficient equipment is needed for cutting, gathering, transporting, sorting and processing small diameter trees and downed debris.*

- *Retention of existing or development of new tree nurseries or greenhouses will be needed to supply seedlings for reforestation projects. Cone collecting and extracting equipment will be needed.*

- *Research and development facilities will need to be upgraded to provide scientific support to new forest products and challenges.*

There is also a need for Forest based production companies and service providers to connect. With the continued decline in material availability it extremely important that businesses build upon one another. The concept is similar to the Elk City's Framing our Communities Business Incubator Program, where they have wood production businesses utilizing each other's "waste" materials to produce another product. Please review the attached story to learn more about the project in Elk City and their goals/successes.

5. **Generally, what is the current skill sets employed in this industry? What skills/talents are needed to move the industry forward?**

Current Skills

Foresters – procurement/prescription/silvicultural/presale/reforestation, Engineers – civil, road, logging, safety Environmental planner – pre-logging and restoration Wildlife and fish biologists, hydrologists, botanists, cultural resources specialists Timber marking and layout crews, surveyors, GIS mapping specialists, tree planters, cone collectors, survey and monitoring crews, slashing crews, loggers, truckers, equipment operators – logging and restoration operations, scalers, mechanics, millwrights, boiler operators, welders, fabricators, electricians, market analysts, market development, Research and Development, economists, human resources, safety officers, purchasing agents, resource clerks, accounting staff, secretaries, office managers, maintenance, receptionists

Future Skills - *as above plus - Chemical and industrial engineers, soil conservationists, soil scientists, environmental scientists and engineers, microbiologists, chemists, restoration specialists, noxious weed specialists, forest geneticists, forest product and environmental designers, wood technologists, onsite and offsite quality control specialists, water purification specialists, wastewater operators/management, more forest laborers*

It is important to also acknowledge that the current forestry related workforce is an aging demographic. One of the gaps identified below is related to the desire to connect younger generations to the woods and the career opportunities; both traditional and emerging opportunities.

6. **In an overall sense, what "gaps" do you see regarding this industry cluster and what ideas do you have about bridging those gaps?**

Gap 1 *- There is a "gap" between available resource and supply needs. The resource is there, but is essentially unavailable. This issue has been at the heart of the forest products demise in western Montana. Most of the forested land in the area is U.S. Forest Service and subject to national policy, specifically the National Environmental Policy Act (NEPA). Local and regional economics have been strongly affected by the outcomes of agency decisions, the lengthy appeal process and litigations. The process that was intended to protect resources has dissolved into controversy, stalemate and ultimately neglect of forest resources.*

Gap 2 *– There is a gap between forest policy, energy mandates, and economic feasibility. Through the Health Forest Restoration Act of 2003, some of the opposition*

to forest management has been reduced, as most people support protection of homes from wildfire in the wildland urban interface. However, the material removed from these areas is primarily small diameter wood with limited, little or no current timber value. Policies and mandates need to be reviewed and determined if they are still appropriate or feasible.

Gap 3 *- Technologies and markets need to be developed that can utilize this material and offer an economic return. If cellulosic ethanol technology was more advanced and developers were able to show economic feasibility of this type of ethanol production, then forest mechanization technology would follow. But development of specialized equipment is expensive and risky, as is purchase of new equipment for logging companies. Money needs to be made available for equipment development, and for logging entrepreneurs.*

Gap 4 *– Current transportation of forest products is expensive and antiquated. Loss of local mills has resulted in long haul distances to get the raw forest material to processing sites. For example, instead of a driver making four trips to a local mill per day, he now can only make two trips to the regional mill per day. If he is paid per load, his pay has been cut in half. If he is paid per hour or mile, the contractor paying the driver's wages is paying more to get the logs to the mill for the same load of logs. Highway use taxes are high, insurance is high, fuel and the associated fuel taxes are high, more miles on trucks result in greater wear and depreciation reducing the value of the equipment and increasing maintenance costs for the same load of logs. Regularly serviced railroad sidings need to be established at key locations to move products, this is especially true for smaller diameter wood products that require a lot of handling and have a marginal economic return. Better transportation would improve the economics of using small diameter wood, and moving finished wood products from the processing areas to marketing areas. Government needs to develop new rail system and encourage rail companies assist community development by offering incentives.*

Gap 5 *– Restoration work must have funding either through economic return from forest products or from government programs funded through taxes. Valuation of products needs to reflect costs.*

Gap 6 *– Values for clean water, air, forest carbon sequestration, forest aesthetics, etc. have not been quantify making environmental stewardship economics difficult to establish. Establish some guidelines.*

Gap 7 *– Making long term stewardship of corporate forest lands part of a corporation's bottom line. Offer incentives, bear the burden legislation.*

Gap 8 *– Means to keep corporate timberlands in the timber land base, i.e. Plum Creek's real estate divestiture. This may become very important in the carbon sequestration issue. Offer incentives, historical use or bear the burden legislation.*

Gap 9 *– Loss of traditional mill operations skills, logging skills, environmental awareness, i.e. an equipment operator knowing by ground indicators (plants, topography, etc) that an area may have subsurface water, and thereby avoiding the area. Keeping and training workforce on a less than guaranteed industry is difficult. Yet the need for skilled competent labor continues to grow as the industry changes to deal with a changing demand for wood products. Training, mentoring.*

The committee also identified the following areas:

- *International/global perspective and marketing*
- *Build Trust between all parties (government, environmental/conservation, industry, recreationists)-the industry needs show sustainable management*
- *Definitions of buzz words "Restoration", "Stewardship", "Collaboration vs. Consensus" "Healthy Working Forests" "Value-Added" "Sustainability"; and remove it from academic language to on the ground implementation*
- *Education- emerging technology and science…how does the logging community stay abreast of emerging information while trying to make ends meet-*
- *Forest fragmentation- instead of looking from on project to the next; encourage and empower whole watershed planning and implementation*
- *Disconnect of communities from the Forests- not understanding the ecology just seeing the results of a harvest- maybe provide resources to urban and rural areas to develop and link working forests and provide K-12 education- Kids in the Woods program- this may work in with the aging workforce-bring more interest into the younger generations.*

7. **Find a success story and be prepared to tell us about it.**

Attachment 1: Vaagen Brothers- Forest Product

Attachment 2: Elk City Idaho's Business Incubator and Jobs in the Woods- Stewardship

Attachment 3: Map of Businesses